



YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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企业微信二维码



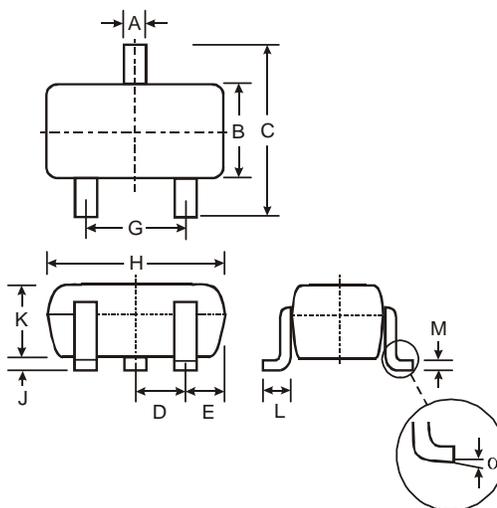
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Features

- Epitaxial Planar Die Construction
- Complementary NPN Types Available (DDTC)
- Built-In Biasing Resistors, R1 = R2

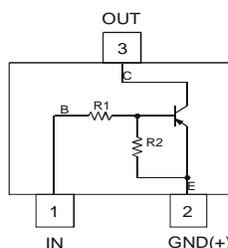
Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking Information: See Page 4
- Type Code: See Table Below
- Ordering Information: See Page 4
- Weight: 0.006 grams (approximate)

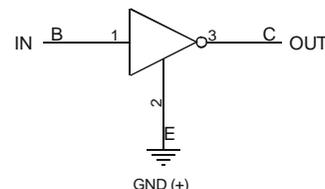


SOT-323		
Dim	Min	Max
A	0.25	0.40
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.18
α	0°	8°
All Dimensions in mm		

P/N	R1, R2 (NOM)	Type Code
NK-DDTA123EUA	2.2K Ω	P04
NK-DDTA143EUA	4.7K Ω	P08
NK-DDTA114EUA	10K Ω	P13
NK-DDTA124EUA	22K Ω	P17
NK-DDTA144EUA	47K Ω	P20
NK-DDTA115EUA	100K Ω	P24



Schematic and Pin Configuration



Equivalent Inverter Circuit

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Supply Voltage, (3) to (2)	V _{CC}	-50	V
Input Voltage, (1) to (2)	V _{IN}	+10 to -12 +10 to -30 +10 to -40 +10 to -40 +10 to -40 +10 to -40	V
Output Current	I _O	-100 -100 -50 -30 -30 -20	mA
Output Current	I _C (Max)	-100	mA
Power Dissipation	P _d	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Input Voltage		V _{I(off)}	-0.5	-1.1	—	V	V _{CC} = 5V, I _O = 100μA
		V _{I(on)}	—	-1.9	-3	V	V _O = 0.3V, I _O = 20mA, NK-DDTA123EUA V _O = 0.3V, I _O = 20mA, NK-DDTA143EUA V _O = 0.3V, I _O = 10mA, NK-DDTA114EUA V _O = 0.3V, I _O = 5mA, NK-DDTA124EUA V _O = 0.3V, I _O = 2mA, NK-DDTA144EUA V _O = 0.3V, I _O = 1mA, NK-DDTA115EUA
Output Voltage		V _{O(on)}	—	-0.1	-0.3	V	I _O /I _I = 10mA/0.5mA, NK-DDTA123EUA I _O /I _I = 10mA/0.5mA, NK-DDTA143EUA I _O /I _I = 10mA/0.5mA, NK-DDTA114EUA I _O /I _I = 10mA/0.5mA, NK-DDTA124EUA I _O /I _I = 10mA/0.5mA, NK-DDTA144EUA I _O /I _I = 5mA/0.25mA, NK-DDTA115EUA
Input Current	NK-DDTA123EUA NK-DDTA143EUA NK-DDTA114EUA NK-DDTA124EUA NK-DDTA144EUA NK-DDTA115EUA	I _I	—	—	-3.8 -1.8 -.88 -.36 -.18 -.15	mA	V _I = -5V
Output Current		I _{O(off)}	—	—	0.5	μA	V _{CC} = -50V, V _I = 0V
DC Current Gain	NK-DDTA123EUA NK-DDTA143EUA NK-DDTA114EUA NK-DDTA124EUA NK-DDTA144EUA NK-DDTA115EUA	G _I	-20 -20 -30 -56 -68 -82	—	—	—	V _O = -5V, I _O = -20mA V _O = -5V, I _O = -10mA V _O = -5V, I _O = -5mA V _O = -5V, I _O = -5mA V _O = -5V, I _O = -5mA V _O = -5V, I _O = -5mA
Input Resistor (R ₁) Tolerance		ΔR ₁	-30	—	+30	%	—
Resistance Ratio		R ₂ /R ₁	0.8	1	1.2	—	—
Gain-Bandwidth Product*		f _T	—	250	—	MHz	V _{CE} = -10V, I _E = 5mA, f = 100MHz

* Transistor - For Reference Only

Typical Curves –NK-DDTA143EUA

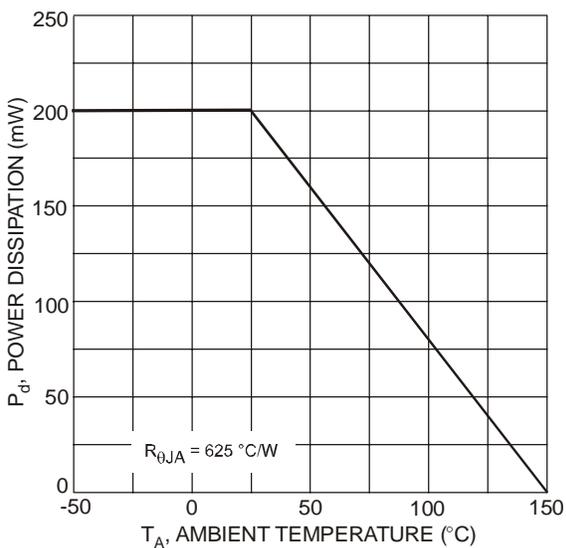


Fig. 1 Derating Curve

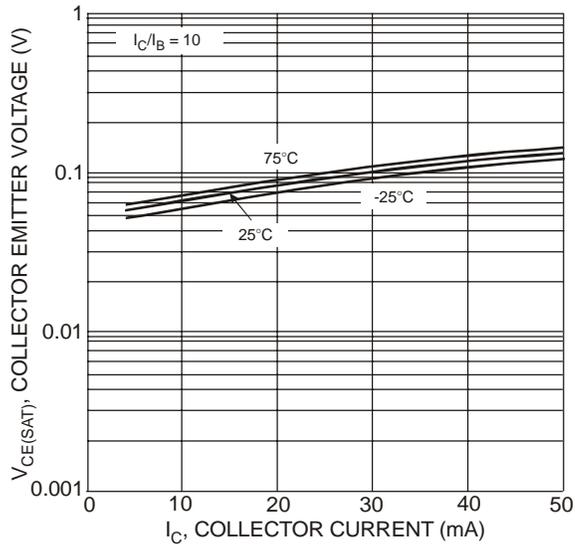


Fig. 2 $V_{CE(SAT)}$ vs. I_C

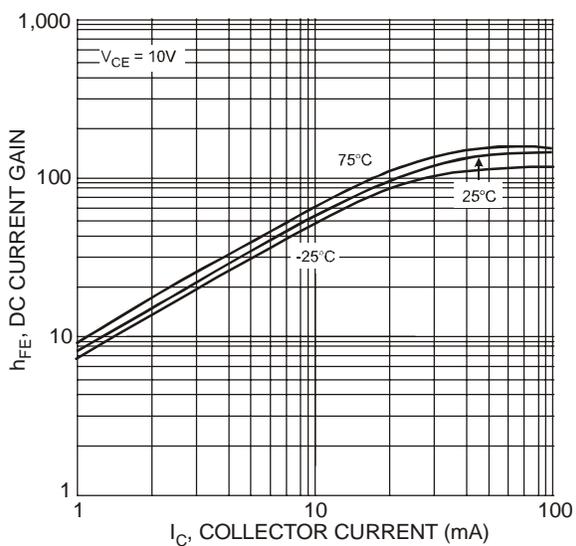


Fig. 3 DC Current Gain

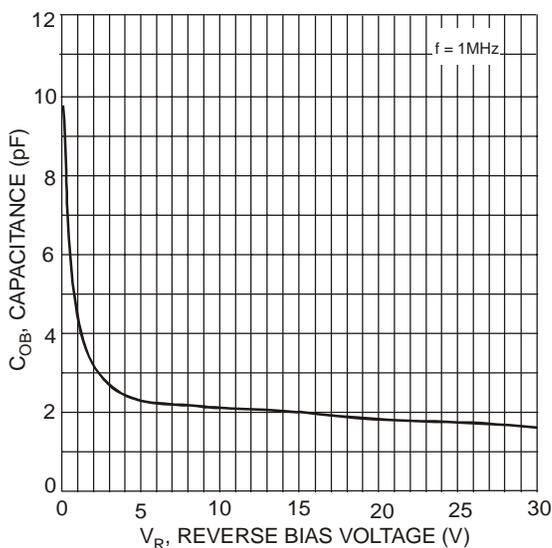


Fig. 4 Output Capacitance

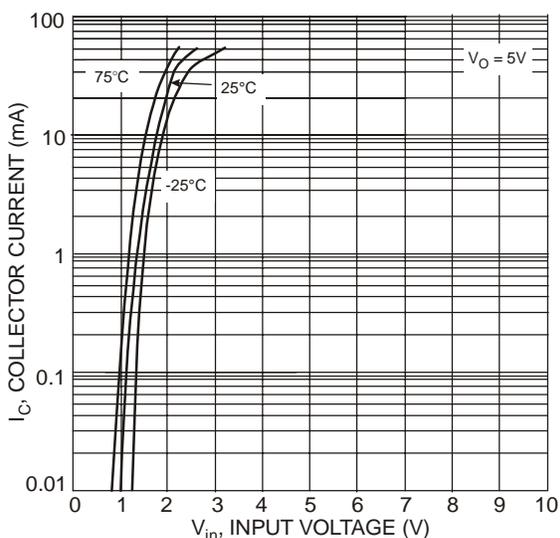


Fig. 5 Collector Current vs. Input Voltage

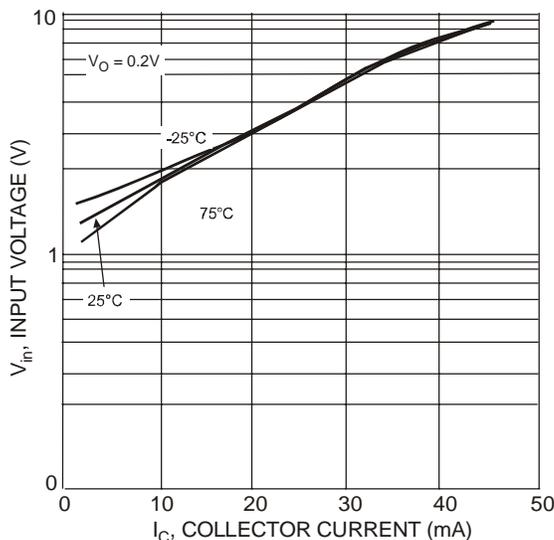


Fig. 6 Input Voltage vs. Collector Current